

Navy Advancement Center

Web site: <http://www.advancement.cnet.navy.mil>

Advancement Handbook for Engineering Aid

This Advancement Handbook was last revised on: July 1999

PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Engineering Aid rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through Part 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the “*Exam Expectations*” section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

Prepared by
Navy Advancement Center Department,
Naval Education and Training Professional
Development and Technology Center

CONTENTS

PARTS		PAGE
1	Advancement Handbook for EA3.....	1-1
2	Advancement Handbook for EA2.....	2-1
3	Advancement Handbook for EA1.....	3-1
4	Advancement Handbook for EAC.....	4-1
Appendix 1	References Used in This Advancement Handbook	A-1

Part 1

Advancement Handbook for EA3

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Inventory tool kits [Occupational standard number(s): A001]
<i>Knowledge</i> you should have to perform this skill:	Identify tool kit elements: <ul style="list-style-type: none"> • Inspections • Tool requisitioning • Loss control
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Engineering Aid (EA) Basic, NAVEDTRA 10696-A • Seabee Supply Manual, COMSECOND/THIRDNCBINST 4400.3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the individual elements of a toolkit inventory, such as performing custodian responsibilities; conducting proper inventories; requisitioning replacement tools; and tracking replenishment activities.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Issue and receive publications/books from a technical library [Occupational standard number(s): A002, A003]
<i>Knowledge</i> you should have to perform this skill:	Maintain Technical Library by performing the following duties: <ul style="list-style-type: none"> • Inventory library • Requisition publications/manuals for operational uses • Organize library materials • Issue and control publication/manual usage
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • COMSECOND/THIRDNCBINST 5070 Series
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about maintaining an Operations Technical Library including performing librarian duties; conducting inventories; requisitioning new publications/manuals; organizing materials; and following proper procedures for issuance of publications/manuals.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	File construction drawings [Occupational standard number(s): A004]
<i>Knowledge</i> you should have to perform this skill:	Maintain file records, including the following: <ul style="list-style-type: none"> • Filing original drawings • Filing prints and data • Recording files
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about filing the various types of construction drawings; recording drawing number assignments; filing original, sepia, and print drawings; folding drawings; and indexing files.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Environmental Protection
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform hazardous material inventories [Occupational standard number(s): C001]
<i>Knowledge</i> you should have to perform this skill:	Identify the proper hazardous material elements including the following: <ul style="list-style-type: none"> • Material Data Safety Sheet (MSDS) • Identification • Handling • Stowage • Labeling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Basic Military Requirements, NAVEDTRA 12043 • Military Requirements for PO3, NAVEDTRA 12044 • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying hazardous materials, using Material Safety Data Sheets (MSDS); following basic procedures for handling hazardous materials; following proper stowage procedures; and identifying and placing placards and labels.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Support
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare material for embarkation [Occupational standard number(s): D001]
<i>Knowledge</i> you should have to perform this skill:	Identify assemblies from a Naval Mobile Construction Battalion (NMCB) Table of Allowance (TOA) for embarkation. <ul style="list-style-type: none"> • Kit 80010 • Kit 80011 • Kit 80026
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect basic questions about identifying the assemblies required for kits assigned to Engineering Aids in an NMCB's TOA.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform operators maintenance on various soil, surveying, and drafting room equipment [Occupational standard number(s): E002]
<i>Knowledge</i> you should have to perform this skill:	Identify and perform minor maintenance to the following equipment: <ul style="list-style-type: none"> • Surveying equipment and associated hand tools • Drafting equipment, tables, lighting, and reproduction machines • Materials testing equipment, apparatus, and associated hand tools
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting minor maintenance and performing repairs on various tools, equipment, machines, and apparatus associated with routine operations.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Install advanced base functional components (ABFC) assemblies [Occupational standard number(s): E003]
<i>Knowledge</i> you should have to perform this skill:	Identify and create basic plans and drawings using the basic groupings in the Facilities Planning Guide, Naval Facilities Engineering Command (NAVFAC) P-437. <ul style="list-style-type: none"> • Components • Facilities • Assemblies
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about installing ABFC component assemblies in support of contingency operations including identifying and creating basic plans and drawings.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Administer first aid under combat conditions [Occupational standard number(s): G001]
<i>Knowledge</i> you should have to perform this skill:	Identify the symptoms and/or basic procedures for the treatment of the following: <ul style="list-style-type: none"> • CPR • Shock • Thrust • Hemorrhage • Heat and cold weather injuries • Transportation • Fractures • Burns
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on general first-aid procedures; clearing airway obstructions and clearing techniques; performing thrust techniques; performing CPR; transporting a casualty; stopping or slowing hemorrhage; controlling shock; preventing or treating heat exposure, cold weather injuries, burns, and fractures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform ambush countermeasures [Occupational standard number(s): G002]
<i>Knowledge</i> you should have to perform this skill:	Describe the counter measures for the following: <ul style="list-style-type: none"> • Near (point) ambush • Far (area) ambush
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing ambush countermeasures; conducting drills; identifying the two types; and determining the success of an ambush.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform survival, evasion, resistance, and escape procedures [Occupational standard number(s): G003]
<i>Knowledge</i> you should have to perform this skill:	Identify effective procedures for evasion, survival, resistance, and escape including the following: <ul style="list-style-type: none"> • Enemy avoidance • Concealment • Evasion travel • Individual and group survival • Water • Food • Plants • S-A-T
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about locating the enemy and evading the enemy; recognizing signs of movement; performing evasion techniques; using recommended survival techniques, including preparing foods, water, and plants; performing S-A-T in escaping and surviving as a prisoner of war.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform prisoner of war (POW) handling procedures [Occupational standard number(s): G004]
<i>Knowledge</i> you should have to perform this skill:	Identify POW handling procedures including the following: <ul style="list-style-type: none"> • Transporting • Searching • Care and Feeding • Treatment • Laws of conflict • 6-S's
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about transporting, searching, caring for, and feeding prisoners. Additionally, you can expect questions about the laws of conflict concerning enemy POWs and the 6-S's.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Install protective and tactical wire entanglements [Occupational standard number(s): G005]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures for placing the following: <ul style="list-style-type: none"> • Protective wire • Tactical wire • Supplemental wire
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about placing protective, tactical, and supplemental wire entanglements including the following: identifying the purpose of the type of wire; determining where and how to lay wire; identifying the tools and equipment needed; and identifying safety precautions when laying out wire entanglements.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform chemical, biological, and radiological (CBR) defensive measures [Occupational standard number(s): G006]
<i>Knowledge</i> you should have to perform this skill:	Identify and perform CBR defensive measures including the following: <ul style="list-style-type: none"> • Protective measures before, during, and after an attack • Protective equipment • Detection equipment • Decontamination equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the different types of CBR agents; recognizing the effects; detecting and identifying symptoms of infection; conducting protective measures and using detection and decontamination equipment; performing first aid and self aid; using MOPP procedures; and marking contaminated areas.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of grenadier [Occupational standard number(s): G007]
<i>Knowledge</i> you should have to perform this skill:	Identify the duties of a grenadier including the following: <ul style="list-style-type: none"> • Characteristics of the M-203 • Ammunition of the M-203 • Safety precautions • Responsibilities of the grenadier
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on identifying the M-203 and its parts; identifying the correct ammunition to use; performing safety precautions; and performing the duties of the grenadier.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of a machine gun team gunner [Occupational standard number(s): G008]
<i>Knowledge</i> you should have to perform this skill:	Identify the duties of a machine gun team gunner including the following: <ul style="list-style-type: none"> • Three types of machine guns • Characteristics • Ammunition • Positioning • Safety precautions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the general information on the M60, MK19 MOD3 40mm, and M2HB 50 cal; determining rates of fire, maximum ranges, collateral equipment, assembly and disassembly, types of ammunition; positioning the team for a defensive posture; and performing all safety precautions related to these weapons systems.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of antitank team gunner [Occupational standard number(s): G009]
<i>Knowledge</i> you should have to perform this skill:	Identify the duties of an antitank team gunner including the following: <ul style="list-style-type: none"> • The weapon system • Characteristics • Positioning • Safety precautions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying characteristics of the 84mm AT4; performing sighting, controls, operations, target engagement and firing positions; and performing all safety precautions and misfire procedures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of fire team automatic rifleman [Occupational standard number(s): G010]
<i>Knowledge</i> you should have to perform this skill:	Identify the duties and responsibilities of the automatic rifleman including the following: <ul style="list-style-type: none"> • Fire team movement • Communications • Weapon use
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing the duties and responsibilities of an automatic rifleman; controlling movement; establishing communications; and using recommended procedures with the weapon.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform land-based combat duties under CBR conditions [Occupational standard number(s): G011]
<i>Knowledge</i> you should have to perform this skill:	Identify the different CBR conditions including the following: <ul style="list-style-type: none"> • Mission-oriented protective posture (MOPP) levels • Effectiveness
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining the different MOPP levels and authorizations; wearing and caring for the permeable protective clothing and mask, personal decontamination, chemical and radiological detection devices; and using contamination markers.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Place trip flares and other warning devices [Occupational standard number(s): G012]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures for effectively placing trip flares including the following: <ul style="list-style-type: none"> • Proper use of the flares • Nomenclature of flare and fuse • Strategic locations • Precautions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on identifying the purpose of the flares; recognizing nomenclatures; determining effective placement and tripping of the flare; and using safety precautions.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform booby trap countermeasures [Occupational standard number(s): G013]
<i>Knowledge</i> you should have to perform this skill:	Identify booby traps including the following: <ul style="list-style-type: none"> • Explosive • Non-explosive • Countermeasures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on recognizing the different explosive and non-explosive booby traps; and using countermeasures for the safe movement of personnel and equipment.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Transport personnel injured in combat [Occupational standard number(s): G014]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures for transportation of a casualty including the following: <ul style="list-style-type: none"> • Types of litters • Man carries
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on transporting a casualty using various types of litters and performing the proper techniques and methods for man carries.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform minor repairs on tactical field telephone systems [Occupational standard number(s): G015]
<i>Knowledge</i> you should have to perform this skill:	Identify the minor repair procedures for the following: <ul style="list-style-type: none"> • TA-312/PT telephone • TA-1/PT telephone • SB-22/PT telephone switchboard
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing basic minor repairs for the various telephones and systems; identifying equipment nomenclatures; splicing cable; and determining dc power requirements.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties as fire direction control (FDC) plotter [Occupational standard number(s): G016]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures of plotting targets on the M17 plotting board including the following: <ul style="list-style-type: none"> • Components of the board • Compute range and distance from the mortar position to the target
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using the M17 plotting board; plotting targets on the firing chart; computing range and distance; and using the correct procedures for preparing firing data.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of assistant gunner in a mortar platoon [Occupational standard number(s): G017]
<i>Knowledge</i> you should have to perform this skill:	Identify the duties and responsibilities of the assistant gunner in the mortar squad including the following: <ul style="list-style-type: none"> • Placing the mortar • Firing the mortar • Maintaining the weapon
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on performing the duties and responsibilities of the assistant gunner in the mortar squad including the following: placing, firing, and maintaining the weapon.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform mortar misfire procedures [Occupational standard number(s): G018]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures required in the event of a misfire including the following: <ul style="list-style-type: none"> • Identifying causes and malfunctions • Dislodging the round • Disposing of the round
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on identifying the causes and malfunctions of the weapon; dislodging a round; properly disposing of a faulty round; and safely clearing a misfired round in the M225 cannon.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform field sanitation procedures [Occupational standard number(s): G019]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures in field sanitation including the following: <ul style="list-style-type: none"> • Latrines • Garbage disposal • Cold climates • Water treatment • Immersion heaters
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on conducting the procedures for installing types of latrines; disposing of garbage; identifying the types of sewage and garbage disposal methods in cold climates; purifying water; and using immersion heaters.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare drawings using conventional construction standards (conventions, symbols and formats) [Occupational standard number(s): H001]
<i>Knowledge</i> you should have to perform this skill:	Apply drawing techniques using the following: <ul style="list-style-type: none"> • Standard drawing formats • Line conventions • Lettering
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using drawing equipment and materials; using basic drafting techniques including the following: drawing formats, line conventions, order of penciling and inking, lettering, and drawing reproduction.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare red-line and as-built drawings based on field measurements [Occupational standard number(s): H002, H003]
<i>Knowledge</i> you should have to perform this skill:	Prepare red-lined and as-built drawings from the following: <ul style="list-style-type: none"> • Minor design change • Field adjustment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about red-lining construction project drawings to show as-built conditions through the duration of the project; and updating original or sepia drawings to show as-built conditions at the completion of the project.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare plot/site plans based on field notes, construction plans, and area maps [Occupational standard number(s): H004]
<i>Knowledge</i> you should have to perform this skill:	Construct civil drawings including the following: <ul style="list-style-type: none"> • Plot/site • Utility plans • Maps • Demolition
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about reading engineer's and graphic drawing scales; determining essential data requirements for existing and proposed features; reading contour lines, and other pertinent features of significance.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare building plumbing plans and isometric diagrams based on notes, sketches, and verbal guidance [Occupational standard number(s): H005]
<i>Knowledge</i> you should have to perform this skill:	Prepare plans and diagrams including the following: <ul style="list-style-type: none"> • Recognize and identify different materials, fittings, joints and connections, valves, pipe supports, and insulation used in distribution and drainage systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying common materials used in the various distribution and drainage systems; reading plumbing symbol identification; and determining functional properties of various valves, pipes, and fixtures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare architectural building plans based on notes, sketches, and verbal guidance (floor plans, roof plans, etc.) [Occupational standard number(s): H006]
<i>Knowledge</i> you should have to perform this skill:	<p>Prepare architectural building plans to include the following:</p> <ul style="list-style-type: none"> • Differentiate among various types of drawings • Recognize the policy and standards governing the preparation of drawings • Identify the main division of a working drawing • Recognize the basic procedures followed in the development of site plans, framing plans, elevations, sections, details, schedules, and bill of materials
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about recognizing the various drawing types; preparing drawing layout and setup; identifying material and component identification; and using the proper procedures, formats, and drawing conventions associated with architectural plans.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Trace and revise drawings [Occupational standard number(s): H007, H008]
<i>Knowledge</i> you should have to perform this skill:	Prepare tracings to include the following: <ul style="list-style-type: none"> • Recognize and identify the basic techniques and tools involved • Identify drawing medium • Identify order of penciling and/or inking • Recognize and issue revisions to drawings
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing and tracing drawings using various drawing mediums, formats, conventions, and revision procedures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and update charts for presentation [Occupational standard number(s): H009]
<i>Knowledge</i> you should have to perform this skill:	Prepare and update charts to include the following: <ul style="list-style-type: none"> • Use of templates • Use of mechanical pens • Use of Leroy lettering machine • Use of Kroy machine
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about following basic chart procedures; and using mechanical lettering equipment to prepare high quality charts for command presentations.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare orthographic drawings [Occupational standard number(s): H010]
<i>Knowledge</i> you should have to perform this skill:	<p>Draw a three-dimensional object or figure to include the following:</p> <ul style="list-style-type: none"> • Multi-view projections • Auxiliary views and sections • Miter line • Arrangement and spacing of views • Normal and non-normal lines • Isometric projections and drawings
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using orthographic projection in terms of first- and third-angle projection; using a miter line; spacing arrangement of the six principal views; performing multi-view analysis; using corner points, normal and non-normal lines, circles, auxiliary views and sections; drawing single-plane projection; and preparing isometric and non-isometric projections.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Plot profiles from field notes, plans, and maps [Occupational standard number(s): H011]
<i>Knowledge</i> you should have to perform this skill:	Prepare profile drawings including the following: <ul style="list-style-type: none"> • Determine final grade or alignment • Compute volumes of earthwork
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about plotting profiles and grade lines from field notes; determining proposed grade, cuts, and fills, and performing earthwork computations.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare cross sections from field notes, plans, and maps [Occupational standard number(s): H012]
<i>Knowledge</i> you should have to perform this skill:	Prepare cross sections in connection with drainage problems, irrigation, grading of earthwork, location, and construction of buildings where the shape of the parcel of land includes the following: <ul style="list-style-type: none"> • Interpolate field data • Center line route cross sections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing basic cross sections obtained through fieldwork; reading field book entries and interpolation; and determining center line and station recordings, and 90° angle layout.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare shop drawings based upon plans, notes, sketches, and verbal guidance [Occupational standard number(s): H013]
<i>Knowledge</i> you should have to perform this skill:	Prepare basic single-line drawings in the following categories: <ul style="list-style-type: none"> • Civil • Architectural • Structural • Mechanical • Electrical • Fire protection
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing basic shop drawings and their application to the various construction disciplines.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare drawings using Department of Defense and Naval Facilities Engineering Command Standards [Occupational standard number(s): H014]
<i>Knowledge</i> you should have to perform this skill:	Prepare drawings that follow: <ul style="list-style-type: none"> • Department of Defense policy and standards • Naval Facilities Engineering Command policy and standards
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using basic standards, formats, and policies according to the Department of Defense and Naval Facilities Engineering Command.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Draw topographic maps [Occupational standard number(s): H015, H020]
<i>Knowledge</i> you should have to perform this skill:	Draw topographic maps including the following: <ul style="list-style-type: none"> • Use of scales • Identification of symbols • Use of contour lines • Proper drawing conventions • Locate intermediate points by interpolation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using scales; reading symbols; identifying contour characteristics and intervals; preparing maps; using the control point method of interpolating contours; and following general requirements for topographic maps.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare drawings using U.S. Standard or System International (SI) units [Occupational standard number(s): H016]
<i>Knowledge</i> you should have to perform this skill:	Prepare drawings to include the following: <ul style="list-style-type: none"> • Use of U.S. standard units • Use of Systems International units
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing drawings that use various units of measurement and conversions.

Advancement Handbook for EA

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare architectural details of drawings from construction plans, notes, sketches, and verbal guidance [Occupational standard number(s): H017]
<i>Knowledge</i> you should have to perform this skill:	Prepare architectural details to include the following: <ul style="list-style-type: none"> • Scales • Dimensioning and tolerances • Units of measure • Symbols and notes • Schedules
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about reading graphic scales; determining dimension and tolerance details; using units of measurement; interpreting application of dimensions and types of notes; and identifying standard architectural symbols.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare building electrical plans, diagrams, and details based upon notes, sketches, and verbal guidance [Occupational standard number(s): H018]
<i>Knowledge</i> you should have to perform this skill:	Prepare electrical drawings to include the following: <ul style="list-style-type: none"> • Distribution systems • Interior wiring systems • Exterior and interior layouts • Symbols
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing plans that represent basic electrical systems, conductors, insulation, conduit, fixtures, and symbols.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Operate ammonia-vapor reproduction equipment [Occupational standard number(s): H019]
<i>Knowledge</i> you should have to perform this skill:	Operate reproduction equipment to include the following: <ul style="list-style-type: none"> • Location of equipment • Types of reproduction machines • Minor maintenance and repairs • Troubleshooting • Machinery components
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about working in the reproduction room; using types of reproduction equipment; performing basic maintenance; troubleshooting; using safety precautions; and identifying machine components.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Place and mark construction survey stakes, hubs, and batterboards [Occupational standard number(s): I001]
<i>Knowledge</i> you should have to perform this skill:	Place and mark semi-permanent markers to include the following: <ul style="list-style-type: none"> • Wooden hubs • Wooden stakes • Batter boards
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying types of semi-permanent markers; placing construction survey stakes, hubs, and batter boards; and recognizing proper markings on the markers.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Locate and use existing monuments and references [Occupational standard number(s): I002]
<i>Knowledge</i> you should have to perform this skill:	Locate various types of control points to include the following: <ul style="list-style-type: none"> • Existing monuments • Reference points
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using existing monuments; and identifying, referencing, and protecting control points.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Construct semi-permanent survey targets [Occupational standard number(s): I003]
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> Construct targets using semi-permanent visual markers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about constructing semi-permanent targets over established or existing control points or reference monuments.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine differences in elevation and horizontal distances from stadia observations [Occupational standard number(s): I004, I005]
<i>Knowledge</i> you should have to perform this skill:	Determine elevations or horizontal distance including the following: <ul style="list-style-type: none"> • Use of stadia boards
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining differences in elevation and linear distance by observation of a stadia rod or stadia board through a telescope; determining stadia board intervals; and recognizing types of graduations on the rods or boards.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Evaluate building layouts by computing diagonals [Occupational standard number(s): I006]
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Check accuracy of rectangular stakeouts by computing diagonals
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about computing diagonals by applying the Pythagorean theorem and triangulation using the right triangle solutions.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Convert or revert azimuths to bearings [Occupational standard number(s): I007]
<i>Knowledge</i> you should have to perform this skill:	Convert directions including the following: <ul style="list-style-type: none"> • Azimuths • Bearings • Deflections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about converting bearings to deflection angles, azimuths to bearings, bearings to interior and exterior angles and reversing the processes, that is, converting deflection angles to bearings, etc.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Stake out extremities for cuts, and fills (slope stakes) [Occupational standard number(s): I008]
<i>Knowledge</i> you should have to perform this skill:	Set and mark slope stakes including the following: <ul style="list-style-type: none"> • Earthwork limits on each side of center line • Cuts and fills
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying slope stakes; grubbing and clearing; determining slope ratio; and computing difference in elevation.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Stake out sites for clearing, grubbing, and rough grading [Occupational standard number(s): I009]
<i>Knowledge</i> you should have to perform this skill:	Establish construction limits including the following: <ul style="list-style-type: none"> • Stake out clearing and grubbing limits • Stake out rough grading limits
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining construction limits applicable to clearing and grubbing and staking out rough grading of a construction area.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Mark locations of existing underground utilities [Occupational standard number(s): I010]
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Locate and determine the lines of underground utilities
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about locating and marking various types of underground utility systems.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Employ standard surveyor's hand signals and voice commands [Occupational standard number(s): I011]
<i>Knowledge</i> you should have to perform this skill:	Communicate in the field using the following: <ul style="list-style-type: none"> • Hand signals • Voice command
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about communicating in the field using standard surveyor's hand signals and voice commands.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish vertical control [Occupational standard number(s): I012]
<i>Knowledge</i> you should have to perform this skill:	Establish vertical control by using the following: <ul style="list-style-type: none"> • Direct leveling • Indirect leveling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about establishing vertical control; basic leveling terms, differential leveling, leveling computations, reciprocal leveling, profile leveling, cross-section leveling, trigonometric leveling, errors, and precision.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform chaining operations on level and sloping grounds [Occupational standard number(s): I013]
<i>Knowledge</i> you should have to perform this skill:	Lay off linear measurements including the following: <ul style="list-style-type: none"> • Duties of chaining party members • Chaining on level ground • Chaining on a slope • Chaining corrections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing basic chaining procedures; performing party member duties and responsibilities; taping on a slope and level ground; making corrections and standards; adjusting tension, plus and minus tape; breaking tape; and making field notes.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Describe terrain features in topographic surveys [Occupational standard number(s): I014]
<i>Knowledge</i> you should have to perform this skill:	Prepare survey field notes to include the following: <ul style="list-style-type: none"> • Notebook setup • Index • Horizontal measurement • Vertical measurement • Building layout
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing, maintaining, and interpolating field books for the various types of surveys.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine vertical and horizontal angle measurement [Occupational standard number(s): I015, I016]
<i>Knowledge</i> you should have to perform this skill:	Calculate angles by using the following: <ul style="list-style-type: none"> • Right triangles • Trigonometric functions
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions for solving mathematical calculations involving right and oblique triangles, Pythagorean theorem, functions sine, cosine, tangent, their cofunctions, law of sine, cosine, tangent, obtuse and acute angles.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Run a traverse by angle measurements [Occupational standard number(s): I017]
<i>Knowledge</i> you should have to perform this skill:	Perform traversing operations including the following: <ul style="list-style-type: none"> • Closed traverse • Open traverse
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting field procedures; organizing the traverse party; conducting reconnaissance; identifying station marks, tying in to existing control; and transversing using linear and angular measurements.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Calculate areas and volumes of geometric figures [Occupational standard number(s): I018]
<i>Knowledge</i> you should have to perform this skill:	Calculate areas and volumes of geometric figures including the following: <ul style="list-style-type: none"> • Recognize the common types of geometrical planes and solid figures • Compute areas of plane figures • Compute volumes of solid figures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing basic geometry calculations, identifying surfaces, figures, and polygons; and determining area and volume.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine errors of closure for linear measurements [Occupational standard number(s): I019]
<i>Knowledge</i> you should have to perform this skill:	Attain precision including the following: <ul style="list-style-type: none"> • Linear error of closure • Maximum angular error of closure
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining first-, second-, and third-order work; applying order of precision; calculating sums of interior and exterior angles; and meeting precision specifications.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine corrections for temperature, sag, and slope in chaining operations [Occupational standard number(s): I020]
<i>Knowledge</i> you should have to perform this skill:	Calculate tape corrections for the following: <ul style="list-style-type: none"> • Temperature • Sag • Slope • Standardization error
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about calibrating a tape; recognizing and correcting for standard error; correcting for temperature variation; correcting for sag; and correcting for slope.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine ground elevations from direct leveling observations [Occupational standard number(s): I021]
<i>Knowledge</i> you should have to perform this skill:	Determine elevations from direct leveling including the following: <ul style="list-style-type: none"> • Recognize basic leveling terms • Perform organization and duties of a level party • Handle instruments and equipment properly • Conduct field procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using bench marks and datum; performing the duties of the instrumentman and rodman; establishing level party organization; handling instruments properly, establishing point selection; setting up instruments; and performing rod reading, note keeping, and fundamental leveling procedures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform specific gravity tests [Occupational standard number(s): J001]
<i>Knowledge</i> you should have to perform this skill:	Perform specific gravity tests on soils and aggregates including the following: <ul style="list-style-type: none"> • Apparent • Bulk • Expedient
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining specific gravity of a soil mass; determining specific gravity of solids, apparent specific gravity, and bulk specific gravity; taking soil sample selections; using testing apparatus and procedures; using a volumetric flask; making calculations; adjusting with correction factors; determining specific gravity of aggregates and mineral filler; using a calibrated and uncalibrated flask and Dunagan apparatus.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform sieve analysis tests [Occupational standard number(s): J002]
<i>Knowledge</i> you should have to perform this skill:	Perform sieve analysis by using the following: <ul style="list-style-type: none"> • Grain-size distribution • Sieve method • Pre-washing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing mechanical analysis; preparing apparatus, sieves, and equipment; perform data sheet computations; and conducting test procedures.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform Atterberg Limit tests [Occupational standard number(s): J003]
<i>Knowledge</i> you should have to perform this skill:	Perform Atterberg Limit tests including the following: <ul style="list-style-type: none"> • Liquid limit • Plastic limit
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing liquid and plastic limit tests; using test equipment and procedures; and recording data sheet calculations.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Obtain and prepare concrete specimens for compressive and flexural strength tests [Occupational standard number(s): J004]
<i>Knowledge</i> you should have to perform this skill:	Obtain concrete and prepare molds for the following: <ul style="list-style-type: none"> • Cylinders • Beams
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about making forms for casting test beams and cylinders; identifying standard form dimensions; establishing layers and rodding requirements; curing and storage; and capping cylinder ends.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Obtain and tag disturbed or undisturbed soil samples [Occupational standard number(s): J005]
<i>Knowledge</i> you should have to perform this skill:	Obtain and tag soil samples by using the following methods: <ul style="list-style-type: none"> • Disturbed • Undisturbed
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about obtaining sampling methods; tagging samples; obtaining soil samples from a pit, trench, or exposed face; and collecting composite samples, moisture content samples, chunk samples, cylinder samples, and quartering samples.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform slump tests [Occupational standard number(s): J006]
<i>Knowledge</i> you should have to perform this skill:	Perform slump test including the following: <ul style="list-style-type: none"> • Preparation • Apparatus • Procedure • Supplementary procedure
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about obtaining the specimen; using test apparatus; preparing the mold; rodding; recognizing slump characteristics; and identifying the behavior of the concrete.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine density and moisture content of soil using the nuclear moisture /density meter [Occupational standard number(s): J007]
<i>Knowledge</i> you should have to perform this skill:	Determine the dry density and moisture content with the nuclear moisture/density meter including the following: <ul style="list-style-type: none"> • Recognize the two sources of radioactive material and what their functions are in determining moisture/density • Conduct meter preparations and procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing basic preparation and procedures used with the meter; identifying radioactive sources and their functions in determining density and moisture; and using meter apparatus.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine moisture content of soil using expedient and oven-dried methods [Occupational standard number(s): J008, J009]
<i>Knowledge</i> you should have to perform this skill:	Determine moisture content by using the following: <ul style="list-style-type: none"> • Oven drying method • Calcium carbide gas pressure method
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using the required laboratory apparatus; determining temperature constants; using procedures to dry and evaluate the sample; performing data sheet calculations; and using the Speedy moisture tester and its apparatus.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine in-place soil densities by the sand cone method [Occupational standard number(s): J010]
<i>Knowledge</i> you should have to perform this skill:	Determine soil density by the sand displacement method including the following: <ul style="list-style-type: none"> • Test preparation • Apparatus • Calibration • Data sheet calculations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about taking test sample volumes; determining the quality of the sand; using apparatus for sand cone calibration and surface calibration; and digging a sample.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform laboratory control soil compaction tests [Occupational standard number(s): J011]
<i>Knowledge</i> you should have to perform this skill:	Perform laboratory control soils compaction tests including the following: <ul style="list-style-type: none"> • Proctor mold • CBR mold
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining optimum moisture content; using compaction apparatus; preparing samples; conducting test procedures; recording data sheet computations; identifying compaction specifications; using compaction equipment and theory including compaction curve, moisture content adjustment, and degree of saturation.

Advancement Handbook for EA3

General EA <i>Skill Area</i>	Material Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine soil bearing capacities with penetrometer proving rings [Occupational standard number(s): J012]
<i>Knowledge</i> you should have to perform this skill:	Determine the load carrying capacity of a soil to include the following: <ul style="list-style-type: none"> • Conditions for use • Apparatus • Preparation • Procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conditions for performing a field in-place test using the apparatus and following test procedures.

Part 2

Advancement Handbook for EA2

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	File and update engineering project files [Occupational standard number(s): A005]
<i>Knowledge</i> you should have to perform this skill:	File and update project files to include the following: <ul style="list-style-type: none"> • Index card files • Standard Subject Identification Codes • Cross-indexing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing an index card file for locating project drawings; preparing index card files; using cross referencing and indexing procedures; and maintaining drawing filing systems.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare timecards [Occupational standard number(s): A006]
<i>Knowledge</i> you should have to perform this skill:	Understand the labor accounting system to include the following: <ul style="list-style-type: none"> • Reporting criteria • Labor categories • Labor codes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Procedures for Naval Mobile Construction Battalion (NMCB) Timekeeping, COMSECOND/COMTHIRDNCBINST 5312.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about following reporting criteria; preparing labor distribution reports; identifying specific labor categories; and using labor codes.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Environmental Protection
A <i>skill</i> you are expected to perform from the General Skill Area above:	Update and maintain Material Safety Data Sheet (MSDS) files [Occupational standard number(s): C002]
<i>Knowledge</i> you should have to perform this skill:	Maintain Material Data Sheets including the following: <ul style="list-style-type: none"> • Filing system • Knowledge of risks and hazards, personnel protective equipment requirements, and safety procedures and precautions • Requirements for the acceptance of a hazardous material
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • Seabee's Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about understanding the contents of a MSDS sheet; identifying when they are issued; and maintaining the sheets in accordance with regulations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct operators maintenance on various soil, surveying, and drafting room equipment [Occupational standard number(s): E004]
<i>Knowledge</i> you should have to perform this skill:	Direct personnel to identify and perform minor maintenance to the following equipment: <ul style="list-style-type: none"> • Surveying equipment and associated hand tools • Drafting equipment, tables, lighting, and reproduction machines • Materials testing equipment, apparatus, and associated hand tools
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 12085 • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying and conducting minor maintenance and repairs on various tools, equipment, machines, and apparatus associated with routine operations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate and direct installation of Advanced Base Functional Component (ABFC) [Occupational standard number(s): E005]
<i>Knowledge</i> you should have to perform this skill:	Coordinate and direct personnel to identify and create basic plans and drawings using the basic groupings in the Facilities Planning Guide, NAVFAC P-437 including the following: <ul style="list-style-type: none"> • Components • Facilities • Assemblies
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Facilities Planning Guide, NAVFAC P-437, Volumes I and II • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about creating ABFC layouts; using terminology; and identifying plans and drawings in support of contingency operations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct patrols [Occupational standard number(s): G020]
<i>Knowledge</i> you should have to perform this skill:	Explain the procedures used to conduct patrols including the following: <ul style="list-style-type: none"> • Planning and preparation • Classification • Mission • Size • Formation • Control • Security • Movement • Execution of mission
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures to follow in conducting patrols, such as planning and preparation, patrol classification, mission, size, formation, control, security, movement, and execution of mission (before, during, and after).

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of fire team leader [Occupational standard number(s): G021]
<i>Knowledge</i> you should have to perform this skill:	Explain the duties and responsibilities of a fire team leader including the following: <ul style="list-style-type: none"> • Mission • Defensive position • Fire plans • Movement • Formation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties of a fire team leader including the following: determining the mission; positioning a fire team on the forward line of troops (FLOT); working with fire plans; identifying suitable movements; and using various formations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of machine gun team leader [Occupational standard number(s): G022]
<i>Knowledge</i> you should have to perform this skill:	<p>Explain the duties and responsibilities of a machine gun team leader including the following:</p> <ul style="list-style-type: none"> • Weapon characteristics • Weapon placement • Fire plan • Fire command • Fire control • Fire discipline • Fire distribution • Fire technique • Team member responsibility
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of a machine gun team leader; knowing the characteristics and placement of the weapon; using fire plans; giving fire commands; performing fire control, fire discipline, fire distribution, and fire technique; and identifying the responsibility of each member of the fire team.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of anti-tank team leader [Occupational standard number(s): G023]
<i>Knowledge</i> you should have to perform this skill:	State the duties and responsibilities of an antitank team leader including the following: <ul style="list-style-type: none"> • Weapon characteristics • Employment • Operation • Safety
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of an antitank team leader; identifying weapon characteristics; employing and operating the weapon; and using weapon safety.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Employ claymore mines [Occupational standard number(s): G024]
<i>Knowledge</i> you should have to perform this skill:	Explain the procedures used for employment of the M18A1 claymore mine to include the following: <ul style="list-style-type: none"> • Nomenclature • Countermeasures • Coverage and methods of fire • Firing device • Installation and firing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about employing the M18A1 claymore mine; identifying its nomenclature; using countermeasures; determining coverage and methods of fire; using the firing device; installing the mine; and firing.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Position perimeter guards [Occupational standard number(s): G025]
<i>Knowledge</i> you should have to perform this skill:	Position guards to include the following: <ul style="list-style-type: none"> • Fighting emplacements • Fields of fire • Fire distribution
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining maximum cover and concealment; constructing a defensive position; providing dug-in emplacements; performing observations; recognizing fields of fire; identifying rifle fire and platoon firing; and determining the extent of target.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Lay out protective and tactical wire entanglements [Occupational standard number(s): G026]
<i>Knowledge</i> you should have to perform this skill:	Explain the requirements and procedures used in placing protective and tactical wire entanglements including the following: <ul style="list-style-type: none"> • Supplementary • Depth • Effectiveness • Uses • Barbed wire • Concertina fencing • Barbed steel tape • Placement
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the requirements and using recommended procedures in placing protective and tactical wire entanglements and supplementary wire; determining depth, effectiveness, and uses; identifying different wires and placements for barbed wire, concertina wire, and barbed steel tape.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Lay out trip flares and other warning devices [Occupational standard number(s): G027]
<i>Knowledge</i> you should have to perform this skill:	Explain the procedures used to set trip flares and warning devices including the following: <ul style="list-style-type: none"> • Uses • Location • Explosive devices • Non-explosive devices • Countermeasures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using trip flares and warning devices; identifying their uses; determining location; using explosive and non-explosive devices; and conducting countermeasures.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of mortar crew leader/gunner [Occupational standard number(s): G028]
<i>Knowledge</i> you should have to perform this skill:	Describe the duties and responsibilities of mortar crew leader and gunner including the following: <ul style="list-style-type: none"> • Description and characteristics of the 60-MM mortar • Assemblies and components • Ammunition • Equipment • Positioning • Preparation for firing • Sighting • Loading and firing • Safety
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of a mortar crew leader or gunner; describing the characteristics of the weapon, its assemblies, components, and ammunition; using specific equipment; positioning and preparing for firing; performing the operations of sighting, loading and firing, and safety.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maneuver fire team using arm and hand signals [Occupational standard number(s): G029]
<i>Knowledge</i> you should have to perform this skill:	Describe the procedures to maneuver fire teams using arm and hand signals to include the following: <ul style="list-style-type: none"> • Speed • Direction • Enemy in sight • Assemble • Column • Echelons • Wedge • Vee • Fire team • Open • Close • Rally point • Objective rally point
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about maneuvering fire teams using specific arm and hand signals and establishing fire team positions.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review and edit drafting work [Occupational standard number(s): H021]
<i>Knowledge</i> you should have to perform this skill:	Review and edit drawings to include the following: <ul style="list-style-type: none"> • Proper use of standards, formats, and conventions • Proper use of tools and equipment • Basic drawing techniques
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using various drawings instruments; using different scales; drawing with lead and ink, technical pens, and pencil leads; using different types of drafting medium; establishing margins, title blocks, drawing layout, sheet numbering, revisions, line conventions, order of penciling and inking, letter and line spacing, mechanical lettering; and performing drawing reproduction.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare property maps [Occupational standard number(s): H022]
<i>Knowledge</i> you should have to perform this skill:	Prepare maps using the following: <ul style="list-style-type: none"> • Use of scales and protractor • Interpolate contours • Representation of relief • Ground point systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using and reading graphic and engineer's scales; performing topographic mapping; using methods to indicate relief; interpolating contours from known elevations; and reading cross profiles and contour characteristics.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	<p>Prepare structural plans and details for wood, steel, concrete, and masonry structures based on notes, sketches, and verbal guidance</p> <p>[Occupational standard number(s): H023, H024]</p>
<i>Knowledge</i> you should have to perform this skill:	<p>Prepare structural plans including the following:</p> <ul style="list-style-type: none"> • Recognize and identify different construction materials • Determine basic structural characteristics in common materials
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the characteristics of wood, steel, concrete, and masonry, basic structural calculations, and making drawing presentations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	<p>Prepare building mechanical plans, layouts, diagrams, and details based on construction plans, notes, sketches, and verbal guidance</p> <p>[Occupational standard number(s): H025, H027]</p>
<i>Knowledge</i> you should have to perform this skill:	<p>Prepare building mechanical plans and service utility water distribution and sewage collection plans including the following:</p> <ul style="list-style-type: none"> • Recognize and identify associated materials • Identify mechanical drawing symbols • Identify various plumbing systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>You can expect questions about common materials used in water distribution systems, sanitary drainage systems, piping materials, fittings, joints and connections, valves, pipe supports, insulation, and branches; recognizing layout of water supply and distribution diagrams; reading waste and soil drainage diagram; and interpreting mechanical symbols.</p>

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare service utility electrical distribution plans, layouts, diagrams, and details based on construction plans, notes, sketches, and verbal guidance [Occupational standard number(s): H026]
<i>Knowledge</i> you should have to perform this skill:	Prepare plans and layouts including the following: <ul style="list-style-type: none"> • Recognize and identify associated materials • Identify electrical drawing symbols • Identify the various electrical systems • Recognize standards and specification requirements
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying electrical transmission and distribution systems; determining interior electrical wiring system, wiring, devices, and service components; locating conduits and fittings; and using code requirements, permits, and drawing symbols.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare layouts of roads and parking areas [Occupational standard number(s): H028]
<i>Knowledge</i> you should have to perform this skill:	Prepare layouts including the following: <ul style="list-style-type: none"> • Road plan • Horizontal and vertical curves • Road profile and grade line • Typical sections • Cross sections • Drainage and road ditches • Material identification
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing drawings for a road plan; identifying profiles; using horizontal and vertical curves; determining sections, drainage, and culverts; and identifying subbase, base, and surface coarse materials.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform field tests and make minor adjustments on surveying equipment [Occupational standard number(s): I021]
<i>Knowledge</i> you should have to perform this skill:	Perform tests and adjustments to include the following: <ul style="list-style-type: none"> • General adjustment procedures • Engineer's level adjustment • Transit adjustment • Minor repairs and replacement procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about maintaining and using instruments; adjusting the level tube; using the horizontal cross hair and line of sight on the engineer's level; adjusting the plane tables, vertical cross hair, line of sight, horizontal axis, telescope level, and vertical circle vernier on the transit.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct preliminary planning for survey operations [Occupational standard number(s): I023]
<i>Knowledge</i> you should have to perform this skill:	Conduct preliminary planning including the following: <ul style="list-style-type: none"> • Identification of survey • Equipment and material requirements • Assignment and duties of party members • Field party's essential needs • Safety
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing different types of surveys; using surveying instruments and equipment; performing a survey party members duties and responsibilities; and using basic safety precautions.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Adjust errors of closures (traverse) [Occupational standard number(s): I024]
<i>Knowledge</i> you should have to perform this skill:	Adjust linear error of closure to include the following: <ul style="list-style-type: none"> • Order of precision • Latitude and departure • Closing a traverse
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing control traverse order of precision; determining latitude and departure; and performing associated computations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine location of station points, and layout horizontal and vertical curves [Occupational standard number(s): I025, I026]
<i>Knowledge</i> you should have to perform this skill:	Determine station points on vertical and horizontal curves to include the following: <ul style="list-style-type: none"> • Types of curves • Elements of curves • Degree of curvature • Grades • Curve formulas and computations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying types of horizontal and vertical curves; identifying the elements of each of the curves; using arc and chord definitions, formulas, deflection angles, and chords; solving a simple curve; solving for a symmetrical and unsymmetrical curve; plotting; using a profile work sheet; and field stakeout.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Calculate allowable errors and make adjustments for level nets [Occupational standard number(s): I027, I028]
<i>Knowledge</i> you should have to perform this skill:	Calculate allowable error including the following: <ul style="list-style-type: none"> • Required precision • Adjustment of level nets
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about calculating allowable errors and adjusting level nets.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct route, profile, cross section, and final location surveys [Occupational standard number(s): I029]
<i>Knowledge</i> you should have to perform this skill:	Conduct surveys to include the following: <ul style="list-style-type: none"> • Route alignment • Fixed-line profile leveling • Cross sections • Final location
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting route survey general planning; performing instrument setup; preparing earthwork operations; using cross-section levels; performing note keeping; using slope stakes; determining areas of cross sections and volumes; using mass diagrams; and plotting.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish reference base lines during survey operations [Occupational standard number(s): I030]
<i>Knowledge</i> you should have to perform this skill:	Establish base lines including the following: <ul style="list-style-type: none"> • Use of electronic distance measuring equipment (EDM) • Use of chaining equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using basic measuring equipment, base nets, quadrilaterals, and precision requirements.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Select vertical and horizontal survey control points [Occupational standard number(s): I031]
<i>Knowledge</i> you should have to perform this skill:	Locate control points including the following: <ul style="list-style-type: none"> • Perform field reconnaissance • Establish supplementary and basic networks • Tie in basic control network to existing monuments
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using existing maps; reading aerial photographs; performing hydrographic surveys; identifying permanent monuments (U.S.G.S.); conducting field reconnaissance; and performing geodetic surveys.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct direct and indirect leveling surveys [Occupational standard number(s): I032]
<i>Knowledge</i> you should have to perform this skill:	Conduct surveys to include the following: <ul style="list-style-type: none"> • Indirect leveling • Direct leveling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining direct vertical distance measurement and vertical angle measurement; taking horizontal and slope distance measurement; determining differences in elevation; and using different types of surveys and terminology.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct topographic survey operations [Occupational standard number(s): I033]
<i>Knowledge</i> you should have to perform this skill:	Conduct survey including the following: <ul style="list-style-type: none"> • Development of the map • Area of tract • Scale of map • Contour interval • Precision • Field procedures • Use of equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about reading topographic survey features; identifying ground points; reading contour lines and intervals; using equipment and instruments; identifying horizontal and vertical control; and plotting.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Locate and re-establish property boundaries [Occupational standard number(s): I034]
<i>Knowledge</i> you should have to perform this skill:	Locate and re-establish boundaries including the following: <ul style="list-style-type: none"> • Property description • Requirements of the land surveyor • Land survey general procedures • Plats of surveyed lands • Survey precision
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting types of land surveys; using equipment and methods; recognizing basic legal aspects; using definitions, property descriptions, records, metes and bounds descriptions, and coordinates.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct preliminary surveys [Occupational standard number(s): I035]
<i>Knowledge</i> you should have to perform this skill:	Conduct surveys to include the following: <ul style="list-style-type: none"> • Field survey parties • Field notes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about employing measurements; collecting data; identifying factors affecting fieldwork; performing on various types of survey parties; and writing field notes.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish horizontal control by traversing [Occupational standard number(s): I036]
<i>Knowledge</i> you should have to perform this skill:	Establish control to include the following: <ul style="list-style-type: none"> • Directions and distances • Transit-tape survey • Traverse operations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about converting directions; following directions by a compass and transit; running a line; running a random line; tying in a point; working on a transit-tape survey party; identifying precision, errors, and mistakes; handling instruments; and using established field procedures.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform land area calculations [Occupational standard number(s): I037]
<i>Knowledge</i> you should have to perform this skill:	Perform calculations to include the following: <ul style="list-style-type: none"> • Double meridian distance • Double parallel distance • Coordinates • Trapezoidal formula • Counting squares • Planimeter
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying meridian distance, double meridian distance (DMD), and double parallel distance (DPD); and using coordinate methods, trapezoidal rule, squares, and areas by the use of a planimeter.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Locate and sight in off-shore points and pile locations [Occupational standard number(s): I038, I039]
<i>Knowledge</i> you should have to perform this skill:	Locate and sight in points and pile locations by the following: <ul style="list-style-type: none"> • Chaining • Triangulation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about establishing offset base lines and using line and row and trigonometric methods.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and update pile driving logs [Occupational standard number(s): I040]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing and updating pile driving logs to include: <ul style="list-style-type: none"> • Format • Log entries
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about following general log formats; and making log entries.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Use advanced surveying equipment [Occupational standard number(s): I041]
<i>Knowledge</i> you should have to perform this skill:	Understand the basic principles and use of the following: <ul style="list-style-type: none"> • Electronic distance measuring equipment (EDM) • Electronic positioning systems • Laser equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using combined theodolite and electronic distance measurement (EDM); using different types of reflectors and targets; conducting basic control surveys; and using laser alignment instruments.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform hydrometer analysis tests and determine frost susceptibility of soil [Occupational standard number(s): J013, J020]
<i>Knowledge</i> you should have to perform this skill:	Perform hydrometer analysis tests including the following: <ul style="list-style-type: none"> • Hydrometer calibration • Meniscus correction • Sample preparation • Dispersing agent • Test apparatus • Procedures • Calculations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting an analysis; following sample preparation and test procedures; using various apparatus; recording data sheet; and performing calculations.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform Marshall Stability tests [Occupational standard number(s): J014]
<i>Knowledge</i> you should have to perform this skill:	Perform Marshall Stability tests including the following: <ul style="list-style-type: none"> • Purpose • Apparatus • Procedure • Calculations • Summarize results
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing specimens; identifying traffic conditions; identifying optimum bitumen content; determining mixing temperatures and compaction; collecting data; using various apparatus; and preparing aggregate.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform strength test of in-place concrete and concrete compressive and flexural strength tests [Occupational standard number(s): J015, J017]
<i>Knowledge</i> you should have to perform this skill:	Perform strength tests to include the following: <ul style="list-style-type: none"> • Flexural strength • Compressive strength
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about testing beams and cylinders; curing and storing; using molds and equipment; following test procedures; performing calculations; identifying fracture types; capping and recording test results.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform California Bearing Ratio tests [Occupational standard number(s): J016]
<i>Knowledge</i> you should have to perform this skill:	Perform the California Bearing Ratio test by including the following: <ul style="list-style-type: none"> • Purpose • Preparation of specimens • Apparatus • Test data • Procedures • Data analysis
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining soil resistance and penetration; using test equipment; evaluating compaction of samples; following penetration test procedures; recognizing soil grouping, saturation, and undisturbed samples; conducting in-place tests; evaluating CBR curves; and performing data analysis.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and perform asphalt extraction tests [Occupational standard number(s): J018]
<i>Knowledge</i> you should have to perform this skill:	Perform asphalt extraction tests to include the following: <ul style="list-style-type: none"> • Apparatus • Procedure • Calculations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting centrifugal extraction; determining asphalt content; using equipment; sampling and using test procedures; using solvent extract and chemical additives; and performing sieve analysis of aggregate.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform laboratory and field soil and aggregate tests [Occupational standard number(s): J019]
<i>Knowledge</i> you should have to perform this skill:	<p>Perform laboratory and field soil and aggregate tests including the following:</p> <ul style="list-style-type: none"> • Field investigations • Visual examination • Odor • Sedimentation • Bite or grit • Feel • Roll or thread • Wet shaking • Breaking • Ribbon • Shine • Sieve analysis
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing various soil field identification tests; using equipment; identifying factor considerations; determining soil descriptions and properties; conducting mechanical analysis; and determining distribution curve, coefficient of uniformity, and coefficient of curvature.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform field or laboratory identification tests on bituminous materials [Occupational standard number(s): J021]
<i>Knowledge</i> you should have to perform this skill:	Perform identification tests on bituminous materials including the following: <ul style="list-style-type: none"> • Bitumen and aggregate identification • Specific gravity • Flash point • Penetration • Ductility • Viscosity
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying unknown bituminous materials, asphalt, tars, cutbacks, cements, emulsions, and aggregates; following established procedures for specific gravity, flash point, penetration, ductility, and viscosity tests.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform tests on aggregates used for concrete and flexible pavement mixture design [Occupational standard number(s): J022]
<i>Knowledge</i> you should have to perform this skill:	Recall procedures for performing tests on concrete and flexible pavement mixtures to include the following: <ul style="list-style-type: none"> • Sieve analysis • Specific gravity • Impurities • Color • Soundness
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying grain-size distribution; identifying fine and coarse aggregates; determining absorption and specific gravity; using the Dunagan method; using test apparatus; performing calibrated and uncalibrated flask method; and identifying freezing and thawing effects of deleterious substances and organic matter.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine unit weights of fine or coarse aggregates [Occupational standard number(s): J023]
<i>Knowledge</i> you should have to perform this skill:	Determine unit weights including the following: <ul style="list-style-type: none"> • Absolute volume
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining maximum aggregate size, fineness modulus, and specific gravity; and performing calculations of absolute volumes.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine densities of asphalt core samples [Occupational standard number(s): J025]
<i>Knowledge</i> you should have to perform this skill:	Determine densities of asphalt core samples including the following: <ul style="list-style-type: none"> • Performance requirements • Apparatus • Test procedures • Calculations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Material Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining and examining site conditions; obtaining sample requirements; using various types of machinery; following established test procedures; determining bulk specific gravity; determining density comparisons and deficiency corrections; and determining job mix formulas.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine volume of horizontal construction materials from drawings and specifications [Occupational standard number(s): K001]
<i>Knowledge</i> you should have to perform this skill:	Determine volumes of horizontal construction materials including the following: <ul style="list-style-type: none"> • Estimating bulk material
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about estimating volumes of various construction materials (soil, concrete, and bituminous pavement) and converting to proper units.

Advancement Handbook for EA2

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine earthwork using mass diagram method [Occupational standard number(s): K002]
<i>Knowledge</i> you should have to perform this skill:	Determine earthwork volumes by the following: <ul style="list-style-type: none"> • Use of profile • Use of mass diagram
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540, Part 1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about calculating average-end area, cut and fill, limit, economical and free-haul distance; identifying soil types and conditions; determining cumulative yardage; plotting; and balancing cuts and fills.

Part 3

Advancement Handbook for EA1

Advancement Handbook for EA1

General EA Skill Area	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compile data for project completion reports (PCR) [Occupational standard number(s): A007]
<i>Knowledge</i> you should have to perform this skill:	Compile data for the PCR to include the following: <ul style="list-style-type: none"> • General scope • Labor expenditure • Work force composition • Problem areas
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force Manual, NAVFAC P-315 • Operations Officer Handbook, COMCBPAC/COMCBLANTINST 5200.2A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about writing project summaries for inclusion to the deployment completion report. There will be basic questions on the report's content only.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Write soils technical report [Occupational standard number(s): A008]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for writing a technical report to include the following: <ul style="list-style-type: none"> • Project • Description of site • Geology • Aggregates • Design mixes • Foundation conditions • Fill and borrow materials • Design criteria • Conclusions and recommendations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the report's contents; recalling the purpose of the report; and describing the report's organization.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and prioritize work schedules [Occupational standard number(s): A009, B003]
<i>Knowledge</i> you should have to perform this skill:	Prepare and prioritize work schedules to include the following: <ul style="list-style-type: none"> • Efficient use of personnel • Milestones and deadlines
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing work assignments and schedules; preparing internal work requests; tracking work progress; and determining top priority (rush) jobs.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct Personnel Readiness Capability Program (PRCP) interviews [Occupational standard number(s): A010]
<i>Knowledge</i> you should have to perform this skill:	Conduct PRCP interviews including the following: <ul style="list-style-type: none"> • Interviewer's responsibilities • Understanding the guides • Interviewing steps • Standard action statements
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Personnel Readiness Capability Program, NAVFAC P-458, Volume 4
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using standard terms; using the interview sequence; using skill definitions and levels; identifying tasks and elements; and following standards and guides.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Use network analysis [Occupational standard number(s): B001]
<i>Knowledge</i> you should have to perform this skill:	Use logic network analysis including the following: <ul style="list-style-type: none"> • Labor control and monitoring • Distribution of resources
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using precedence diagramming; identifying the contents of an activity block; reading a basic schedule; determining lag time, float, and the critical path; reading bar charts; and using resource leveling.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform facilities maintenance inspections [Occupational standard number(s): B002]
<i>Knowledge</i> you should have to perform this skill:	Perform facilities maintenance inspections including the following: <ul style="list-style-type: none"> • Control inspection procedures • Preventive maintenance inspection procedures • Operator inspection procedures • Reports and records • Annual inspection summary (AIS)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Inspection of Shore Facilities, NAVFAC MO-322
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using inspection system descriptions; conducting types of inspections; taking inventory; completing forms and record keeping; identifying the purpose and scope of AIS; and following inspection procedures.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Environmental Protection
A <i>skill</i> you are expected to perform from the General Skill Area above:	Control environmental protection at Naval Construction Force and Public Works (NCF/PW) construction sites, work areas and shops [Occupational standard number(s): C004]
<i>Knowledge</i> you should have to perform this skill:	Evaluate environmental protection programs for compliance including the following: <ul style="list-style-type: none"> • Environmental pollution • Water pollution • Ground pollution • Air pollution • Solid waste • Pollution impact areas
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting protection programs and compliance procedures; using techniques for the identification, prevention, and cleanup of water, ground, and air environmental pollutants; and performing cleanup of oil spills and other hazardous materials.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Provide technical advice on soils, surveying, and drafting room equipment maintenance [Occupational standard number(s): E007]
<i>Knowledge</i> you should have to perform this skill:	Provide technical advice for maintaining the following equipment: <ul style="list-style-type: none"> • Soils • Surveying • Drafting
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Materials Testing, NAVFAC MO-330 • Use and Care of Hand Tools and Measuring Tools, NAVEDTRA 12085
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about following basic maintenance procedures; making minor adjustments to precision instruments; and using standard equipment used by Engineering Aids.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct and coordinate installation of Advanced Base Functional Components (ABFC) facilities [Occupational standard number(s): E008]
<i>Knowledge</i> you should have to perform this skill:	Direct and coordinate the use and application of the Facilities Planning Guide to include ABFC groupings of the following: <ul style="list-style-type: none"> • Components • Facilities • Assemblies
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Facilities Planning Guide, NAVFAC P-437, Volumes I & II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about discussing ABFC development; determining components, facilities, and assemblies; identifying the organization of the guides; using DoD category codes and tailoring components and facilities for site adaptability.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and maintain project packages [Occupational standard number(s): E009]
<i>Knowledge</i> you should have to perform this skill:	Maintain project packages to include the following: <ul style="list-style-type: none"> • General information and correspondence • Activities and network • Resources • Plans • Drawings/specifications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about recognizing the organization's structure; and identifying contents and reports contained in a typical project package.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Quality Assurance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform construction inspections [Occupational standard number(s): F001]
<i>Knowledge</i> you should have to perform this skill:	Conduct tests and inspections to ensure compliance with the following: <ul style="list-style-type: none"> • Project plans • Project specifications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing a quality control inspection report; determining report routing; and using the Resident Officer in Charge of Construction (ROICC) interface.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare rough maps, field sketches, and overlays [Occupational standard number(s): G030]
<i>Knowledge</i> you should have to perform this skill:	Explain the procedures used to prepare rough maps, field sketches, and overlays to include the following: <ul style="list-style-type: none"> • Cover and concealment • Obstacles • Avenues of approach • Panoramic • Topographic • Overlay uses • Register marks
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the preparing and using maps, field sketches, and overlays; using cover and concealment; showing obstacles and ways to overcome them; selecting avenues of approach; reading panoramic and topographic sketches and maps; and determining overlay requirements.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform the duties as rifle squad leader [Occupational standard number(s): G031]
<i>Knowledge</i> you should have to perform this skill:	<p>Explain the duties and responsibilities of a rifle squad leader to include the following:</p> <ul style="list-style-type: none"> • Ideal squad composition • Discipline • Appearance • Training • Control • Squad conduct • Weapons • Equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the rifle squad leader; determining the ideal number of personnel assigned; maintaining discipline; exhibiting professional appearance; providing squad training; maintaining control and squad conduct; maintaining weapons and equipment; and performing fire control, fire discipline, and squad movement.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of the platoon guide [Occupational standard number(s): G032]
<i>Knowledge</i> you should have to perform this skill:	Describe the duties and responsibilities of the rifle platoon guide to include the following: <ul style="list-style-type: none"> • Administration • Supply and timely resupply • Casualty record
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the rifle platoon guide; performing administrative duties, such as supply, timely resupply, and casualty reporting; and making weapon assignment.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of the rifle platoon petty officer [Occupational standard number(s): G033]
<i>Knowledge</i> you should have to perform this skill:	Describe the duties and responsibilities of a rifle platoon petty officer to include the following: <ul style="list-style-type: none"> • Assistant to the platoon commander • Squad position • Weapons qualification
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the rifle platoon petty officer; determining squad position; and conducting weapons qualification. As assistant to the platoon commander, you must also know the responsibilities of the platoon commander and act as platoon commander in his/her absence.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of the machine gun squad leader [Occupational standard number(s): G034]
<i>Knowledge</i> you should have to perform this skill:	Explain the duties and responsibilities of the machine gun squad leader to include the following: <ul style="list-style-type: none"> • Selection and assignment of positions and targets • Weapons qualification
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the machine gun squad leader; selecting and assigning positions and targets; and conducting weapons qualifications. Your duties are very similar to that of the rifle squad leader.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of the antitank squad leader [Occupational standard number(s): G035]
<i>Knowledge</i> you should have to perform this skill:	Describe the duties and responsibilities of the antitank squad leader to include the following: <ul style="list-style-type: none"> • Basic duties • Selection and assignment of positions and targets • Weapons qualification • Other equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the antitank squad leader; identifying the basic duties; selecting and assigning positions and targets; conducting weapons qualification; and performing other assigned duties.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform duties of the weapons platoon petty officer [Occupational standard number(s): G036]
<i>Knowledge</i> you should have to perform this skill:	Describe the duties and responsibilities of the weapons platoon petty officer to include the following: <ul style="list-style-type: none"> • Weapons qualification
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing the duties and responsibilities of the weapons platoon petty officer; and conducting weapons qualification and other duties such as those described by the rifle platoon petty officer.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct installation of protective and tactical wire entanglements [Occupational standard number(s): G037]
<i>Knowledge</i> you should have to perform this skill:	Determine the requirements for placing protective and tactical wire entanglements including the following: <ul style="list-style-type: none"> • Uses • Construction • Types • Classification
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the installation of protective and tactical wire entanglements, their uses, construction, types, and classification.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Instruct perimeter guards [Occupational standard number(s): G038]
<i>Knowledge</i> you should have to perform this skill:	Identify the procedures for instructing perimeter guards including the following: <ul style="list-style-type: none"> • Fighting emplacements • Fields of fire • Fire distribution
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing maximum cover and concealment; constructing a defensive position; establishing dug-in emplacements; conducting observations; recognizing fields of fire; performing rifle fire and platoon firing; and determining the extent of target.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct installation of trip flares and other warning devices [Occupational standard number(s): G039]
<i>Knowledge</i> you should have to perform this skill:	Determine the requirements for the placement of trip flares and other warning devices including the following: <ul style="list-style-type: none"> • Grenades • Claymore mines • Trip flares • Booby traps • Explosive and non-explosive devices • Countermeasures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the requirements and uses when placing trip flares and other warning devices, such as grenades, claymore mines, booby traps, explosive and non-explosive devices; and conducting countermeasures.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Construction Combat Readiness
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct placement of aiming stakes [Occupational standard number(s): G040]
<i>Knowledge</i> you should have to perform this skill:	Explain the purpose for using aiming stakes to include the following: <ul style="list-style-type: none"> • Limits • Night fire
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Combat Handbook, Volume 1, NAVEDTRA 12003
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using aiming stakes tactically and safely.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review and develop alternate construction concepts based on field adjustments [Occupational standard number(s): H029, H030]
<i>Knowledge</i> you should have to perform this skill:	Develop alternate construction concepts as submitted by the following: <ul style="list-style-type: none"> • Field Adjustment Request (FAR) • Design Change Directive (DCD)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions identifying the contents of a FAR/DCD request; using a submittal log; routing a request; and updating as-builts.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Check layouts and drawings for technical accuracy and completeness [Occupational standard number(s): H031]
<i>Knowledge</i> you should have to perform this skill:	Check layouts and drawings including the following: <ul style="list-style-type: none"> • Technical accuracy • Completeness
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions checking and editing drawings; conforming drawing organization and formats to applicable standards; and ensuring accuracy of detail.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Develop site adaptation changes for buildings and structures [Occupational standard number(s): H032]
<i>Knowledge</i> you should have to perform this skill:	Develop changes to site buildings and structures including the following: <ul style="list-style-type: none"> • Modular elements • Economy • Specific location • Mission • Unit composition • Availability of other assets
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about adapting a proposed construction site to meet mission and operational requirements.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine drainage areas to be used in ditch and culvert designs [Occupational standard number(s): H033]
<i>Knowledge</i> you should have to perform this skill:	Determine drainage areas by using the following: <ul style="list-style-type: none"> • Topographic interpretation • Site reconnaissance surveys • Drawings and specifications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about determining drainage areas of minor open drains; and locating outfall ditches and culverts from reading drawings, survey field books, and topographic maps.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Drafting
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare design sketches using naval facilities design manuals and technical publications [Occupational standard number(s): H034]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing sketches using the following: <ul style="list-style-type: none"> • Design manuals • Technical publications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • EA Basic, NAVEDTRA 10696-A • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK 1006/1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using NAVFAC publications and design manuals when preparing design sketches.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Tie-in horizontal control stations with grid coordinate systems [Occupational standard number(s): I042]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for tying in horizontal control stations using the following: <ul style="list-style-type: none"> • Bearing • Distance
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using bearings, distances, quadrilateral, latitudes, departures, and coordinates.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct topographic survey operations [Occupational standard number(s): I043]
<i>Knowledge</i> you should have to perform this skill:	Direct topographic surveys including the following: <ul style="list-style-type: none"> • Development of the map • Area of tract • Scale of map • Contour interval • Precision • Field procedures • Use of equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about directing a topographic survey; reading contour lines and intervals; using equipment and instruments; plotting; and identifying map features.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Check accuracy and quality of all survey note keeping and survey data tabulations [Occupational standard number(s): I044]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for checking the accuracy and quality of the following: <ul style="list-style-type: none"> • Survey field notes • Data tabulations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about setting up various types of field books; entering pertinent data and extraneous entries; and performing survey tabulations.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish horizontal control operations by triangulation [Occupational standard number(s): I045]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for establishing horizontal control by triangulation including the following: <ul style="list-style-type: none"> • Networks • Stations, signals, and instrument supports • Procedures • Triangles, polygons, and quadrilaterals adjustments
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect question about identifying types of networks, primary and secondary stations, targets, and signals; measuring angles; determining direction; using base line measurements; and performing computations.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct leveling survey parties [Occupational standard number(s): I046]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing a leveling survey party to include the following: <ul style="list-style-type: none"> • Indirect leveling • Direct leveling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about directing survey parties for direct and indirect leveling operations; using vertical distance and angle measurement; using horizontal and slope distance measurement; determining differences in elevation; and conducting different types of surveys.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform stellar and solar observations and calculations for field astronomy surveys [Occupational standard number(s): I047]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for performing stellar and solar observations for field astronomy surveys to include the following: <ul style="list-style-type: none"> • Direction from celestial observations • Elements of field astronomy • Determining latitude • Sun observations for azimuth
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about taking time, terrestrial and celestial system of coordinates; calculating declination, right ascension, hour angle, polar and zenith distance, latitude and longitude; and conducting field procedures.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Surveying
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct transit and tape survey parties [Occupational standard number(s): I048]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing transit and tape survey parties to include the following: <ul style="list-style-type: none"> • Duties and responsibilities of party members • Taping and surveying procedures • Care and use of instruments
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying chaining and surveying procedures; identifying party members duties and responsibilities; making corrections and standards; and recording field notes.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct soils exploration [Occupational standard number(s): J026]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for conducting soils explorations to include gathering soil samples for the following: <ul style="list-style-type: none"> • Examination • Testing • Classifying • Development of a soil profile
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330 • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the location and its nature; classifying soil layers; determining the condition of soil in place; establishing drainage; and identifying groundwater and bedrock.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Classify soils using Unified Soil Classification System (USCS), laboratory test and field identification method results [Occupational standard number(s): J030, J031]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for classifying soils to include the following: <ul style="list-style-type: none"> • Coarse grained soils • Fine grained soils • Highly organic soils
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying gravel and gravelly soils, sand and sandy soils, silts and clays, and peat.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review and interpret results of soils, aggregate, concrete, and asphalt tests [Occupational standard number(s): J032]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for interpreting results from the following tests: <ul style="list-style-type: none"> • Soils • Aggregate • Concrete • Asphalt
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330 • EA Intermediate/Advanced, NAVEDTRA 12540 • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying acceptable data; performing test procedures; determining material conditions; and recording test results.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct laboratory/field soil and aggregate tests [Occupational standard number(s): J033]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing laboratory and field tests to include the following: <ul style="list-style-type: none"> • Preparation • Procedures • Material handling • Safety • Calculations • Evaluation • Reporting
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330 • EA Intermediate/Advanced, NAVEDTRA 12540 • EA Basic, NAVEDTRA 10696-A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about directing various tests for soils and aggregates.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare concrete, flexible pavement, and soil stabilization design mixes using test data [Occupational standard number(s): J034]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for evaluating test data to design mixes for the following: <ul style="list-style-type: none"> • Concrete • Flexible pavement • Soil Stabilization
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330 • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing bituminous mixtures; using gyratory, Marshall, and surface area test methods; conducting flexural and compressive strength tests; identifying the mechanics for stabilization; and identifying types and amounts of stabilizing agents.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Materials Testing
A <i>skill</i> you are expected to perform from the General Skill Area above:	Inspect prepared areas for asphalt placement [Occupational standard number(s): J035]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for inspecting areas for asphalt placement to include the following: <ul style="list-style-type: none"> • Subbase preparation • Compaction • Layout
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Materials Testing, NAVFAC MO-330 • EA Intermediate/Advanced, NAVEDTRA 12540
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing the subbase; determining the prescribed lift thickness; using compaction efforts; and determining in-place density.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare time, labor, material, and cost estimates based on drawings and specifications [Occupational standard number(s): K003]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing estimates based on drawings and specifications to include the following: <ul style="list-style-type: none"> • Material estimates • Equipment estimates • Labor estimates
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Planner's and Estimator's Handbook, NAVFAC P-405 • EA Intermediate/Advanced, NAVEDTRA 12540 • Facilities Planning Guide, NAVFAC P-437, Volumes I & II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about using drawings and specifications; completing estimating work sheets; identifying material takeoff (MTO); completing bill of material (BM); determining waste and loss factors; identifying equipment production; using a table of allowance; calculating preliminary and detailed manpower estimates; and determining manpower production efficiency.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Assist in the preparation of aircraft and ship load plans [Occupational standard number(s): K004]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing load plans for the following: <ul style="list-style-type: none"> • Amphibious embarkation • Air embarkation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Embarkation Manual, COMSECONDNCB/COMTHIRDNCBINST 3122.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying types of exercise flyaways and shiploading; using an aircraft load planner and loading diagram; planning movement; determining aircraft capabilities and loadmaster; using information from a ship's loading characteristic pamphlet; and identifying standard methods of loading ships.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare project schedules based on estimates [Occupational standard number(s): K005]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing project schedules to include the following: <ul style="list-style-type: none"> • Advantages and disadvantages of network analysis • Elements • Precedence diagrams
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405 • Facilities Planning Guide, NAVFAC P-437, Volumes I & II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying advantages and disadvantages of network analysis; identifying activities and events; determining time and duration computations; and determining basic logic patterns.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Write specifications for construction projects [Occupational standard number(s): K006]
<i>Knowledge</i> you should have to perform this skill:	Recall procedures for writing specifications to include the following: <ul style="list-style-type: none"> • Describe quality of materials, installation requirements, and construction methods • Organization of specification • Types of specifications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate/Advanced, NAVEDTRA 12540 • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about preparing types of reference specifications; using general formats and terminology; determining organization of specifications (Construction Standards Institute) and guidance.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Planning, Estimating and Scheduling
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare network analysis [Occupational standard number(s): K007]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for preparing a network analysis to include the following: <ul style="list-style-type: none"> • Construct a logic network • Sequence of work • Forward and backward pass • Typical activity block • Total float, free float, and lag times • Different logic types
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying information blocks within an activity block; determining critical path; running a forward and backward pass; calculating free and total float and lag time; establishing logical sequence of activities; and using different logic types.

Advancement Handbook for EA1

General EA <i>Skill Area</i>	Rate specific training
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct training on drafting, surveying, and material testing procedures and techniques [Occupational standard number(s): L001]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for training subordinates in the proper procedures and techniques in the following engineering disciplines: <ul style="list-style-type: none"> • Drafting • Surveying • Materials testing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Basic, NAVEDTRA 10696-A • EA Intermediate/Advanced, NAVEDTRA 12540 • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect general training questions on conducting various procedures; using training techniques; and identifying safety issues involved with drafting, surveying, and materials testing.

Part 4

Advancement Handbook for EAC

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Provide technical assistance on plans and specifications [Occupational standard number(s): A011]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for providing technical assistance on plans and specifications including the following: <ul style="list-style-type: none"> • Drawing conventions and symbols • Reviewing checklist • Planning and scheduling • Site conditions and special requirements • Construction methods and procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405 • Policy and Procedures for Project Drawing and Specification Preparation, MIL-HDBK-1006/1A • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about reading and using various components within project plans; identifying the Construction Specifications Institute (CSI) seventeen major divisions of work; understanding the contents of a checklist; scheduling of work; determining site conditions; and using recommended construction methods and procedures.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Administer Personnel Readiness Capability Programs (PRCP) [Occupational standard number(s): A012]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for administering the PRCP program
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Personnel Readiness Capabilities Program, Volume 4, NAVFAV P-458 • Skills Assessment Manual, NAVFAC P-1105
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the requirements, procedures, training, and utilization of PRCP data and guidelines to determine a unit's readiness.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate tasks assigned to Engineering Office [Occupational standard number(s): B004]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating tasks assigned the engineering office including the following: <ul style="list-style-type: none"> • Unit organization • Scheduling • Classification and priority of tasks • Engineering Service Request (ESR)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • EA Intermediate & Advanced, NAVEDTRA 12540 • EA Basic, NAVEDTRA 10696-A • Operations Officer Handbook, COMCBPAC/COMCBLANTINST 5200.2AA • Naval Construction Force Manual, NAVFAC P-315
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about working in an operational unit organization and working with its chain of command; performing office procedures; determining work classification; and prioritizing and scheduling of work.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine personnel and work assignments based on PRCP data analysis [Occupational standard number(s): B005]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for determining personnel and work assignments including the following: <ul style="list-style-type: none"> • Skill inventory • Skill deficiencies
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Personnel Readiness Capability Program, NAVFAC P-458, Volume 4 • Skills Assessment Manual, NAVFAC P-1105
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing a skill assessment; identifying deficiencies; and using an interview work sheet and interviewable skills listing sheet.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Manage utilities and energy conservation programs [Occupational standard number(s): B006]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for managing utilities and energy conservation programs including the following: <ul style="list-style-type: none"> • Responsibilities • Functions performed • Division components
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Organization and Functions for Public Works Departments, NAVFAC P-318
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about recognizing the roles and responsibilities of the utilities division; administering energy conservation programs; and monitoring functions performed.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare and update project progress charts [Occupational standard number(s): B007]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for updating project progress charts including the following: <ul style="list-style-type: none"> • Logic network • Construction Activity Summary Sheets • Two week schedules • Bar charts • Resource leveling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Planner's and Estimator's Handbook, NAVFAC P-405 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about managing a logic network; performing a forward and backward pass; completing a typical activity block; determining critical path and float times; updating the contents of the Construction Activity Summary Sheet (CAS); identifying concepts of resource leveling; and reading the various types of bar charts.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process field adjustment requests [Occupational standard number(s): B008]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for processing a field adjustment request including: <ul style="list-style-type: none"> • Submittal log • Areas associated with the Field Adjustment Request (FAR) form • Routing request
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about serving as the liaison between the battalion and ROICC; using the standard form; describing areas of the submittal log and routing requests; and identifying approving authorities.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate and direct turnover of projects, materials, and related equipment [Occupational standard number(s): B009]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating and directing the turnover of projects, materials, and related equipment including the following: <ul style="list-style-type: none"> • Project, material, and equipment status • Types of turnovers • Joint turnover memorandum
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook • Operations Officer Handbook, COMCBPAC/COMCBLANTINST 5200.2A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting types of turnovers; taking inventory; monitoring turn-in of tools, material, and equipment; performing turnover procedures; and completing required reports.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate and direct preparation of materials and equipment for embarkation [Occupational standard number(s): B010]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating and directing the preparation of materials and equipment for embarkation including the following: <ul style="list-style-type: none"> • Mount-out packaging and palletized cargo • Hazardous cargo • Vehicle/Civil Engineer Support Equipment (CESE) preparation • Weight and balance
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Embarkation Manual, COMSECOND/COMTHIRDNCBINST 3122.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying types, sizes and weights of mount-out boxes; monitoring hazardous cargo loading procedures and verifying certification; preparing and marking vehicles and CESE; determining fuel requirements; and calculating center of balance and weight requirements.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Implement a maintenance and cost control program [Occupational standard number(s): B011]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for implementing a maintenance and cost control program including the following: <ul style="list-style-type: none"> • Organization and responsibility • Maintenance plan • Work classification • Inspection program • Job scheduling • Material management • Accounting/budget • Turnover procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Maintenance Management Program for Naval Construction Force Camps, COMSECOND/COMTHIRDNCBINST 11014.2
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about managing a Bravo Company maintenance platoon; using a camp maintenance plan; completing project status reports; determining work classification; conducting various types of inspections and completing inspection reports; scheduling jobs; organizing a shop load plan; managing materials; using the Coordinated Shipboard/Shorebased Allowance List (COSAL); maintaining collateral equipment; accounting for shop equipment; and conducting a turnover inspection.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate and direct all construction projects assigned to a company or detachment [Occupational standard number(s): B012]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating and directing construction projects including the following: <ul style="list-style-type: none"> • Jobsite management • Material and equipment management • Project execution • Project monitoring • Environmental • Safety • Quality control
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Crewleader's Handbook • Operations Officer Handbook, COMCBPAC/COMCBLANTINST 5200.2A
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about all facets of coordinating and directing construction projects.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate equipment assignments [Occupational standard number(s): B013]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating equipment assignments including the following: <ul style="list-style-type: none"> • Tools and kits • Civil Engineer Support Equipment (CESE)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Seabee Supply Manual, COMSECOND/THIRDNCBINST 4400.3 • Naval Mobile Construction Equipment Management, COMSECOND/THIRDNCBINST 11200.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about conducting equipment and kit issues; following inventory requirements; coordinating replenishment activities; maintaining and caring for assigned equipment; dispatching CESE; identifying categories of automotive vehicle assignments; and observing operator's maintenance responsibilities.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct operation and maintenance of utilities [Occupational standard number(s): B014]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing operations and maintenance of utilities including the following: <ul style="list-style-type: none"> • Organization • Operations • Maintenance • Scheduling • Reporting
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Organization and Function for Public Works Department, NAVFAC P-404 • Maintenance Management Program for Naval Construction Force Camps, COMSECOND/COMTHIRDNCBINST 11014.2 • Maintenance Management of Shore Facilities for Small Activities, NAVFAC MO-321.1 • Facilities Management, NAVFAC MO-321
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about working in a Public Works Utilities Branch; performing operations and maintenance responsibilities; scheduling; and writing and filing reports procedures.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct repair, alteration, and maintenance of facilities [Occupational standard number(s): B015]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing repair, alteration, and maintenance of facilities including the following: <ul style="list-style-type: none"> • Facilities projects on real property • Classification • Documentation • Processing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Facilities Project Manual, OPNAVINST 11010.20 • Organization and Function for Public Works Department, NAVFAC P-404 • Maintenance Management Program for Naval Construction Force Camps, COMSECOND/COMTHIRDNCBINST 11014.2 • Facilities Management, NAVFAC MO-321 • Maintenance Management of Shore Facilities for Small Activities, NAVFAC MO-321.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying work classifications; supervising facilities projects; preparing project documentation and submission procedures; programming repair and maintenance projects, and supervising various types of projects.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate assigned projects between command and customer [Occupational standard number(s): B016]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating assigned projects between command and customer including the following: <ul style="list-style-type: none"> • Activity liaison responsibilities
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Facilities Management, NAVFAC MO-321 • Maintenance Management of Shore Facilities for Small Activities, NAVFAC MO-321.1
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about performing duties of the Activities Civil Engineer (ACE), Staff Civil Engineer, and activity liaison functions.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Environmental Protection
A <i>skill</i> you are expected to perform from the General Skill Area above:	Manage environmental protection programs at Naval Construction Force/Public Works (NCF/PW) construction sites, work areas, and shops [Occupational standard number(s): C007]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for managing environmental programs including the following: <ul style="list-style-type: none"> • Naval Construction Force Units • Public Works sites
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Environmental Protection Manual, OPNAVINST 6240.3 • Environmental and Natural Resources Protection Manual, OPNAVINST 5090.1 • Oil Spill Control for Inland Waters and Harbors, NAVFAC P-908 • Solid Waste Disposal, NAVFAC DM 5.10 • Groundwater Pollution Control, NAVFAC DM 5.14
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about recognizing environmental, water, ground, and air pollution; controlling hazardous materials; identifying and using warning markings and labels; completing OSHA forms; and following recommended procedures for hazardous material storage.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Construction Support
A <i>skill</i> you are expected to perform from the General Skill Area above:	Assist in management and operations of Mobile Construction Battalions, Construction Battalion Units, or Public Works Departments [Occupational standard number(s): D020]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for assisting in the management and operations including the following: <ul style="list-style-type: none"> • Mobile Construction Battalion • Construction Battalion Unit • Public Works
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Naval Construction Force, NAVFAC P-315 • Organization and Functions for Public Works Departments, NAVFAC P-318
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about assisting in the management and operations of an NMCB, CBU, and PW, including identifying the principals of organization; coordinating functions; and performing duties and responsibilities.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Construction Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Coordinate and direct installation of Advanced Based Functional Components (ABFC) [Occupational standard number(s): E010]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for coordinating and directing the installation of ABFC systems including the following: <ul style="list-style-type: none"> • Components • Facilities • Assemblies
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Facilities Planning Guide, NAVFAC P-437, Volumes I and II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the purpose of the ABFC; analyzing system types; using the facilities planning guide; following procedures; and identifying the requirements used to direct/coordinate the installation of ABFC.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Quality Assurance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Administer construction quality control programs [Occupational standard number(s): F002]
<i>Knowledge</i> you should have to perform this skill:	Identify the techniques used to administer construction quality control programs including the following: <ul style="list-style-type: none"> • Quality measures • Construction methods • Evaluations • ROICC • Inspections
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Inspection of Shore Facilities, NAVFAC MO-322, Volumes I and II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about providing contract administration; identifying the components and responsibilities of the Naval Facilities Engineering Command; identifying the cognizant authority; administering and maintaining the quality assurance program; conducting surveillance methods; and following recommended reporting procedures.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Quality Assurance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Administer tool kit inventory and inspection programs [Occupational standard number(s): F003]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for administering tool kit inventory and inspection programs including the following: <ul style="list-style-type: none"> • Inspection requirements • Control • Requisitioning
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Engineering Aid Basic, NAVEDTRA 10696-A • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Seabee Supply Manual, COMSECOND/THIRDNCBINST 4400.3
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying the elements of a tool kit inventory; controlling frequency of inspections; monitoring turnover requirements; performing custodial responsibilities; requisitioning equipment and tools; and tracking replenishment activities.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Quality Assurance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Administer shore facilities inspection programs [Occupational standard number(s): F004]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for administering shore facilities inspection programs including the following: <ul style="list-style-type: none"> • Inspection system • Control inspections • Preventive maintenance inspections • Operator inspections • Reports and records
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Construction Force/Seabee 1 & C, NAVEDTRA 12543 • Inspection of Shore Facilities, NAVFAC MO-322, Volumes I and II
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about identifying and contrasting the three inspection categories; specifying and meeting inspection objectives; and following recommended reporting requirements.

Advancement Handbook for EAC

General EA <i>Skill Area</i>	Rate Specific Training
A <i>skill</i> you are expected to perform from the General Skill Area above:	Direct training on drafting, surveying, and materials testing procedures and techniques [Occupational standard number(s): L002]
<i>Knowledge</i> you should have to perform this skill:	Recall the procedures for directing training including the following: <ul style="list-style-type: none"> • Drafting • Surveying • Materials Testing
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Engineering Aid Basis, NAVEDTRA 10696-A • Engineering Aid Intermediate & Advanced, NAVEDTRA 12540 • Materials Testing, NAVFAC MO-330
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about following recommended techniques and procedures required to perform drafting, surveying, and materials testing.

Appendix 1

References Used in This Advancement Handbook

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
EA3	COMSECOND/ THIRDNCBINST 4400.3	Seabee Supply Manual	N/A	Note 3
	COMSECOND/ THIRDNCBINST 5070.1 Series	Naval Mobile Construction Battalion Library Requirements	N/A	Note 3
	MIL-HDBK 1006/1A	Policy and Procedures for Project Drawings and Specifications Preparation	N/A	Note 4
	NAVEDTRA 12043	Basic Military Requirements	N/A	Note 1
	NAVEDTRA 12044	Military Requirements for PO3	N/A	Note 1
	NAVEDTRA 10696-A	Engineering Aid Basic	N/A	Note 1
	NAVEDTRA 12003	Seabee Combat Handbook, Vol.1	N/A	Note 1
	NAVFAC MO-330	Materials Testing	N/A	Note 4
EA2	COMSECOND/ COMTHIRD NCBINST 5312.1	Procedures for NMCB Timekeeping	N/A	Note 3
	MIL-HDBK 1006/1A	Policy and Procedures for Project Drawings and Specifications Preparation	N/A	Note 4
	NAVEDTRA 10696-A	Engineering Aid Basic	N/A	Note 1
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	N/A	Note 1
	NAVEDTRA 12540	Engineering Aid Intermediate and Advanced, Part I	N/A	Note 1
	NAVFAC MO-330	Materials Testing	N/A	Note 4
	NAVFAC P-437	Facilities Planning Guide, Volumes I & II	N/A	Note 4
	Seabee Crewleader's Handbook	Seabee Crewleader's Handbook	N/A	Note 6

EA2	NAVEDTRA 12003	Seabee Combat Handbook, Vol.1	N/A	Note 1
	NAVFAC P-405	Seabee Planner's and Estimators Handbook	N/A	Note 4
EA1	COMCBPAC/ LANTINST 5200.2	Operations Officer Handbook	N/A	Note 3
	COMSECOND/ THIRDNCBINST 3122.1	Embarkation Manual	N/A	Note 3
	MIL-HDBK 1006/1A	Policy and Procedures for Project Drawings and Specifications Preparation	N/A	Note 4
	NAVEDTRA 10696-A	Engineering Aid Basic	N/A	Note 1
	NAVEDTRA 12003	Seabee Combat Handbook, Vol.1	N/A	Note 1
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	N/A	Note 1
	NAVEDTRA 12540	Engineering Aid Intermediate and Advanced, Part I and II	N/A	Note 1
	NAVEDTRA 12543	Naval Construction Force/Seabee 1 & C	N/A	Note 1
	NAVFAC MO-322	Inspection of Shore Facilities, Volumes I and II	N/A	Note 4
	NAVFAC MO-330	Materials Testing	N/A	Note 4
	NAVFAC P-315	Naval Construction Force Manual	N/A	Note 4
	NAVFAC P-405	Seabee Planner's and Estimators Handbook	N/A	Note 4
	NAVFAC P-437	Facilities Planning Guide, Volumes I & II	N/A	Note 4
	NAVFAC P-458	Personnel Readiness Capability Program, Volume 4	N/A	Note 4
	Seabee Crewleader's Handbook	Seabee Crewleader's Handbook	N/A	Note 6

EAC	COMCBPAC/ LANTINST 5200.2	Operations Officer Handbook	N/A	Note 3
	COMSECOND/ THIRDNCBINST 3122.1	Embarkation Manual	N/A	Note 3
	COMSECOND/ THIRDNCBINST 4400.3	Seabee Supply Manual	N/A	Note 3
	COMSECOND/ COMTHIRDNCBINST 11014.2	Maintenance Management Programs for Naval Construction Force Camps	N/A	Note 3
	COMSECOND/ COMTHIRDNCBINST 11200.1	Naval Mobile Construction Equipment Management	N/A	Note 3
	MIL-HDBK 1006/1A	Policy and Procedures for Project Drawings and Specifications Preparation	N/A	Note 4
	NAVEDTRA 10696-A	Engineering Aid Basic	N/A	Note 1
	NAVEDTRA 12540	Engineering Aid Intermediate and Advanced, Part I and II	N/A	Note 1
	NAVEDTRA 12543	Naval Construction Force/Seabee 1 & C	N/A	Note 1
	NAVFAC DM 5.10	Solid Waste Disposal	N/A	Note 4
	NAVFAC DM 5.14	Groundwater Pollution Control	N/A	Note 4
	NAVFAC MO-321	Maintenance Management of Shore Facilities	N/A	Note 4
	NAVFAC MO-321.1	Maintenance Management of Shore Facilities for Small Activities	N/A	Note 4
	NAVFAC MO-322	Inspection of Shore Facilities, Volumes I and II	N/A	Note 4
	NAVFAC MO-330	Materials Testing	N/A	Note 4
	NAVFAC P-315	Naval Construction Force Manual	N/A	Note 4

	NAVFAC P-318	Organization and Functions for Public Works Departments	N/A	Note 4
	NAVFAC P-404	Organization and Function for Public Works Department	N/A	Note 4
	NAVFAC P-405	Seabee Planner's and Estimators Handbook	N/A	Note 4
	NAVFAC P-437	Facilities Planning Guide, Volumes I & II	N/A	Note 4
	NAVFAC P-458	Personnel Readiness Capability Program, Volume 4	N/A	Note 4
	NAVFAC P-908	Oil Spill Control for Inland Waters and Harbors	N/A	Note 4
	NAVFAC P-1105	Skills Assessment Manual	N/A	Note 4
	OPNAVINST 3501.115 Series	Required Operational Capabilities, Projected Operational Environment	N/A	Note 2
	OPNAVINST 5090.1 Series	Environmental and Natural Resources Protection Manual	N/A	Note 2
	OPNAVINST 6240.3	Environmental Protection Manual	N/A	Note 2
	OPNAVINST 11010.20	Facilities Project Manual	N/A	Note 2
	Seabee Crewleader's Handbook	Seabee Crewleader's Handbook	N/A	Note 6

LEGEND:

Note 1– To order, MILSTRIP to NAVICP PHILA (Stk No. from NAVSUP P2002) or via INTERNET <http://www.nll.navsup.navy.mil>

Note 2 – INTERNET <http://www.neds.nebt.daps.mil/>

Note 3 – Ltr request to: Commander
Second Naval Construction Brigade
1310 8th Street Suite 100
Norfolk, VA 23521-2435

Note 4 – Ltr request to: Commander
Naval Facilities Engineering Command Detachment
Seabee Logistics Center
4111 San Pedro Street
Port Heuneme, CA 93043-4410

Note 5 – Ltr request to: Commanding Officer (Code 662)
Naval Construction Battalion Center
1000 23rd Avenue
Port Hueneme, CA 93043-4301

Note 6 – Ltr request to: Naval School
Civil Engineer Corps Officers
3502 Goodspeed Street, Suite 1
Port Hueneme, CA 93043-4336